



Faculty Development Programme (FDP)

ON

Recent trends in Big Data Analytics, Artificial Intelligence & Machine Learning
[30-04-2018 to 04-05-2018]

Organized by

Gandhi Institute of Engineering & Technology (Autonomous)

Gunupur – 765 022, ODISHA

in association with

Techtrunk Ventures Pvt. Ltd, Hyderabad

Sponsored by

Ministry of Micro, Small and Medium Enterprises (MSME), New Delhi

Under the scheme of Entrepreneurial and Managerial Development of
SMEs through Incubators



Requirements for Workshop:

- Laptop with Min. 2 GB RAM (3 GB Recommended)
- Linux OS or Windows with VMWARE (Company will provide VMWARE)
- Internet Connection
- Participation/Registration Fee: 100 Rs/-

All participants will get the Participation certificate from Techtrunk Ventures Pvt. Ltd. Hyderabad

Topics to be covered in FDP:

Big Data Analytics & Hadoop:

- Fundamentals of Big data
- Big Data Management
- Distributed file systems for big data storage, access, and analytics
- Frameworks and tools for big data cyber security analytics
- Performance modelling, simulation and analysis
- Big data applications in cyber security
- Parallel and distributed algorithms for big data analytics
- Big data case studies and applications

HADOOP

- Different Components of Hadoop
- Introduction to Apache Pig
- Map Reduce vs. Apache Pig
- SQL vs. Apache Pig
- Different Data Types in Pig
- Modes of Execution in Pig
- Execution Mechanism
- Transformations in Pig
- How to Write a Simple Pig script
- UDFs in Pig

HDFS (Hadoop Distributed File System)

- Significance of HDFS in Hadoop
- Features of HDFS
- 5 daemons of Hadoop

HIVE

- HIVE Introduction
- HIVE Architecture
- HIVE Meta Store
- HIVE Integration with Hadoop

MAP REDUCE

- MapReduce Architecture
- MapReduce Programming Mode
- Different Phases of MapReduce Algorithm
- Different Data Types in MapReduce
- How to Write a Basic MapReduce Program
- Joining Datasets in MapReduce Jobs - Map Joins and Reduce Joins
- Creating Input and Output Formats in MapReduce Jobs
- How to Debug MapReduce Jobs in Local and Pseudo Cluster Mode
- Data Localization in MapReduce
- Combiner (Mini Reducer and Partitioner)

Artificial Intelligence & Machine Learning

Module 1

- Introduction to Artificial Intelligence
- Applications of AI & Current trends
- Different AI Techniques
- AI Agents
- PEAS Analysis
- Agent Environment Analysis
- Different Types of AI Agents
- Machine Learning
- Introduction and Applications of Machine Learning
- Supervised and Unsupervised Learning
- Classification & Regression Problem
- Clustering, Anomaly Detection
- Getting started with Linear Regression
- Mathematics behind Linear Regression
- Building Linear Model

Module 2

- Getting started with python programming
- Installing Anaconda
- Python variables, lists, tuples and dictionaries
- Control Structure in Python
- Defining Functions in Python
- Using modules and packages
- Numpy for Data computation
- Matplotlib for Data Visualization
- Pandas for data exploration
- Using scikit-learn
- Creating linear regression models using scikit-learn

Module 3

- Getting Started with Artificial Neural Networks
- Introduction to neurons, weights
- Activation Function
- Input Layers, Hidden Layers and Output Layers
- Single layer perceptron Model
- Multilayer Neural Network
- Back Propagation Algorithm introduction
- Programming Neural Network using Python
- Building Regression models using ANN
- Classification Examples using ANN

Module 4

- K Nearest Neighbour Models
- Using KNN for Data Classification
- Building Models using KNN
- Support Vector Machine
 - Applications and Mathematics
- Using SVM for classification
- Projects

Projects covered –

1. Housing Prices prediction
2. Character Recognition Algorithm
3. Diabetes Detection Algorithm
4. IRIS Clustering

About Artificial Intelligence & Machine Learning:

The world is moving towards the involvement of artificial intelligence and machine learning with almost everything possible. Companies like Google, Uber, Tesla and many more have already started releasing different models of the traditional automobile vehicle equipped with AI. It is expected that AI is the key technology which is going to revolutionize every business and industrial sector. This FDP brings you a fully hands-on experience on AI & Machine Learning to give you a taste of Technology and generate a quick start interest to work with future technologies.

Outcomes of Big Data & Hadoop:

To Understand business analytics and big data technologies, Learning data mining concepts, techniques through an open source DM tool, role of big data technologies (Hadoop, HBase, Hive) in business analytics, Acquire the knowledge and learn to use Hadoop (HDFS and MapReduce), HBase and Hive.

NOTE: HODs are advised to send the filled in forms on or before 18-04-2018 by 5.00 PM with registration amount of 100 Rs/- per participant.

Registration:

S.N.	Name of the Faculty	Designation	Amount paid	Sign
1			100 Rs/-	
2			100 Rs/-	
3			100 Rs/-	
4			100 Rs/-	
5			100 Rs/-	
6			100 Rs/-	
7			100 Rs/-	
8			100 Rs/-	
9			100 Rs/-	
10			100 Rs/-	
11			100 Rs/-	
12			100 Rs/-	
13			100 Rs/-	
14			100 Rs/-	
15			100 Rs/-	

Sign of HOD